# Maxima®

## MAXIMA HEAVY DUTY COLUMN LIFT

### ML4030B/ML6045B USER MANUAL

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# 1. Cautions

1.1 Do not modify, or maintain electronic control system without permission;
1.2 Working load on each column should be no more than rated load of 7.5 tons;
1.3 Make sure there is no sundry on column tracking surface before lifting, or the slide blocks may be damaged;
1.4 Load type of electric motor is S2, with 15 minutes working time;
1.5 Maxima Heavy Duty Column Lift is equipped with double safety system of mechanical lock and hydraulic check valve. Before working under elevated vehicle, please make sure there is no abnormality with all connections;
1.6 Please use high quality hydraulic oil according to Chart 1. Fill in at least 12 L oil into oil tank. Change the hydraulic oil after first 100 working hours, and re-change it every 3000 working hours.

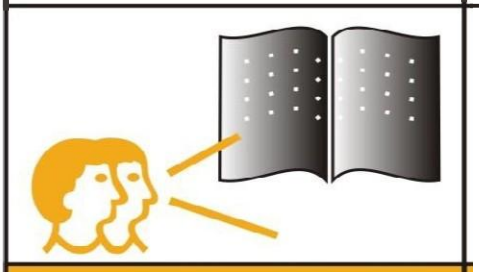
| Hydraulic oil | N32# | N46# |
|---|---|---|
| applicative temperature | -4~104 °F | 32~104 °F |
| kinematic viscosity (40°C)$mm^2/s$ | 30 | 40 |
| solidifying point °F (≤) | -31 | -13 |
| recommended brand | MOBIL; ESSO; SHELL; HME | |

Chart 1

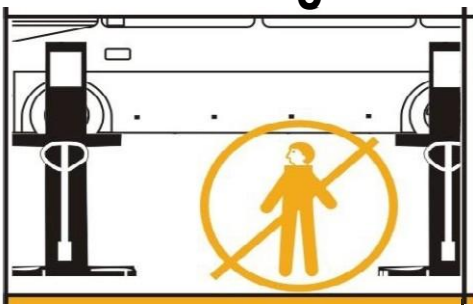
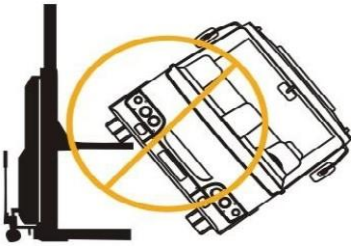
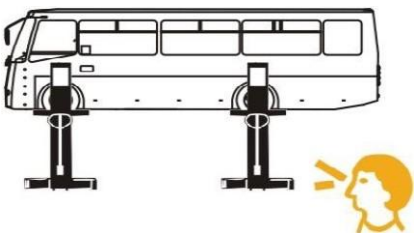
## Note:

1. Do not fill too much hydraulic oil, in case the oil overflows during lifting procedure;
2. N32#: hydraulic oil of low solidifying point;
3. N46#: wearable hydraulic oil

1.7 Lubricate all relevant parts, e.g. safety hook and its axle once a month; clear the slide block track and apply some lubricant;
1.8 The elevated vehicle should exactly follow below requirements:
   1) Nobody is allowed to stay in vehicle during lifting up/down;
   2) It is forbidden to lift a vehicle without enough air in any tire;
   3) The vehicle wheels should be parallel to vehicle body;
1.9 Make sure the minimum space between vehicle roof and ceiling is no less than 150mm during indoor operation;
1.10 DO NOT operate the lift when there is any fault with it;
1.11 Lower all columns onto ground after operation;
1.12 During repair works, the horizontal strength on vehicle should not exceed 20% of vehicle's dead weight;
1.13 Do not press UP/DOWN frequently for short lifting/descending, except in SINGLE mode;
1.14 Operate the lift strictly according to instructions and warning in Fig. 1;
1.15 Recharge the battery after daily work or every 10-20 lifts, or after 15 days storage.

| Safety Instruction | Warning | Caution |
|---|---|---|
|  | | |
| It is necessary to refer to the complete operation instructions, especially for trouble shooting.The operation of the lift is permitted by authorized persons only. | Never overload lift | The field of motion of the load and of the load carrying devices shall be free of obstructions |

| Safety Instruction | Warning | Caution |
|---|---|---|
| | | |
| Proper inspection and maintenance before safe operation. Moveable and mobile lifts must be prevented from moving unintentionally | It is forbidden to climb onto the load or load carrying device when they are raised unless via a specifically designed access. | It shall draw attention to the safe method of carrying the load and to the rule that,after raising a short distance, the vehicle shall be checked to ensure that it is correctly and safely positioned. |

| Warning | Warning | Caution |
|---|---|---|
|  |  |  |
| It is forbidden for people to stand in the field of motion of the load and the load carrying device during the movement. | Position automobile with center of gravity at midway between adapters. | It shall draw attention to the rule that the load carrying dev1ce shall be observed by the operator throughout the motion of the lift. |

| Vehicle type | Empty WBiUht [I] | Max.albwed wind speed [ID/S] |
|---|---|---|
| CIPI,CIPIVIII,IIIIIWI.IIPPill | from 1 to 10 | 14 |
| bus,artlculated lorries | from 10 to 15 | 20 |
| lorries and heavy vehicles | uraatar than 15 | 24 |

Fig. 1

## 2. Features

MAXIMA ML4030B/ML6045B Heavy Duty Column Lift is the most up-to-date hydraulic heavy vehicle lift. Driven by hydraulic cylinder in each column, the lifting arm goes up and down easily and smoothly. High accuracy balancing system ensures the cylinders working synchronously. Unique design fits heavy duty vehicle assembling and repair shop.

ML4030B/ML604B applies to vehicles within 30/45 tons for purposes of assembly, repair, and maintenance, oil-changing, washing and other possible services.

- Unique Synchronization System:

To ensure a smooth lift up/down cycle, even when the load on lift is unequally distributed;

- Human Engineering:

Operation is available at all columns. One set includes one main column and 3 slave columns (ML4030B)/ 5slave columns (ML6045B);

- Safety measures

Double safety system, mechanical lock and hydraulic check valve ensures safe operation;

- Diagnosing Trouble Functions:

It will stop immediately if there is any problem.

## 3. Technical Parameter

MAXIMA Wireless Heavy Duty Column Lift is designed & manufactured strictly under European Standard EN1493:1998.

- Ground requirements: compression strength ≥ 15MPa; Gradient ≤ 1:200; within the area of the columns, the level difference must not be more than 10 mm;
- Keep the equipment away from combustible or explosive materials.

| Model / Specification | ML4030B | ML6045B |
|---|---|---|
| Column Numbers | 4 | 6 |
| Lifting Capacity | 16,500 lbs per column | 16,500 lbs per column |
| Lifting Stroke | 67" | 67" |
| Time of Full Rise | ≤120s | ≤120s |
| Voltage | DC 24V | DC 24V |
| Motor Power per Column | 2.2Kw | 2.2Kw |
| Weight per Column | 1200 lb | 1200 lb |
| Tire Diameter | 19 ~ 44" | 19 ~ 44" |
| Rated Hydraulic Pressure | 20Mpa | 20Mpa |
| Axle Stand | optional | optional |

Chart 2

## 4. Structure sketch

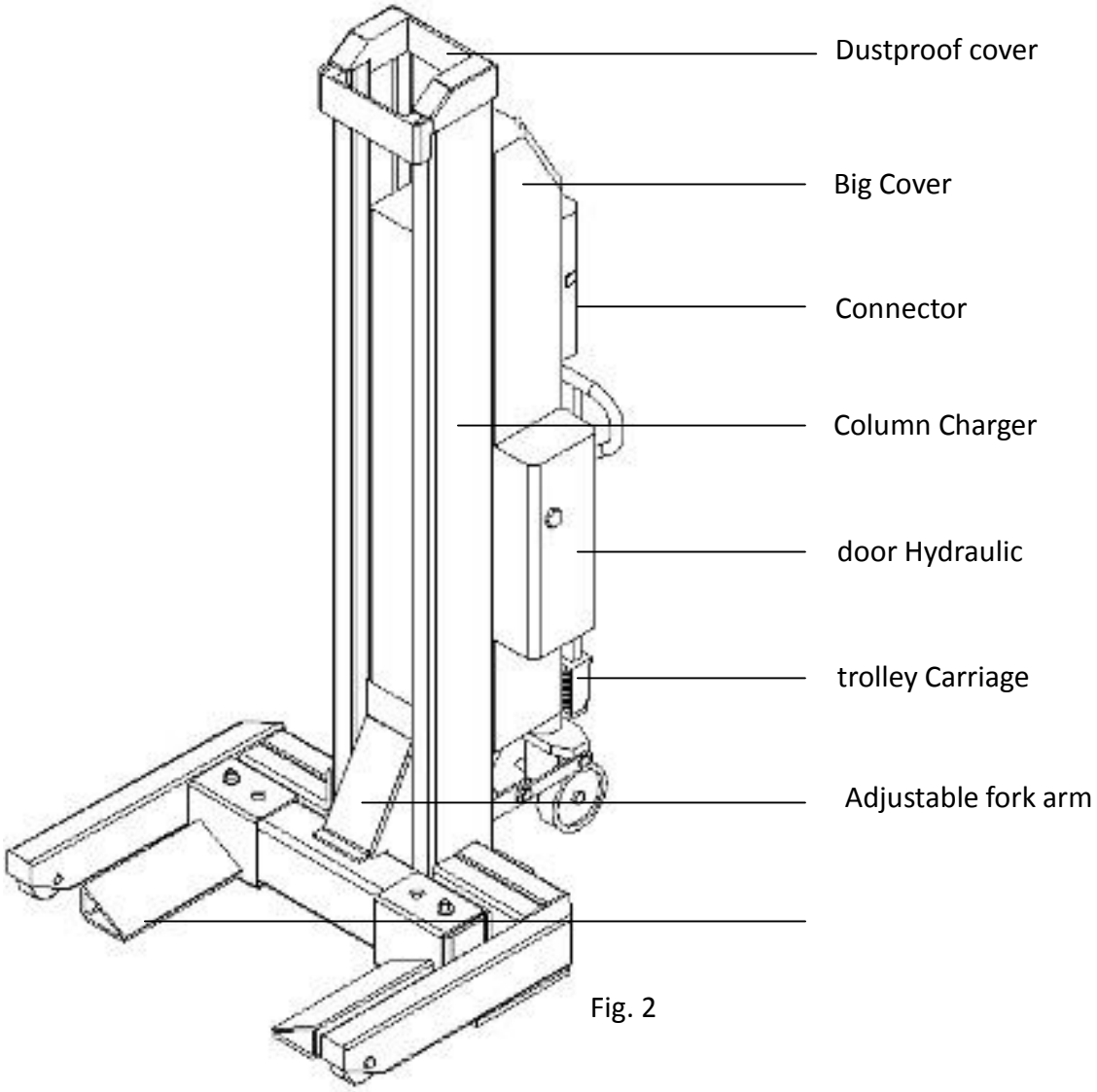
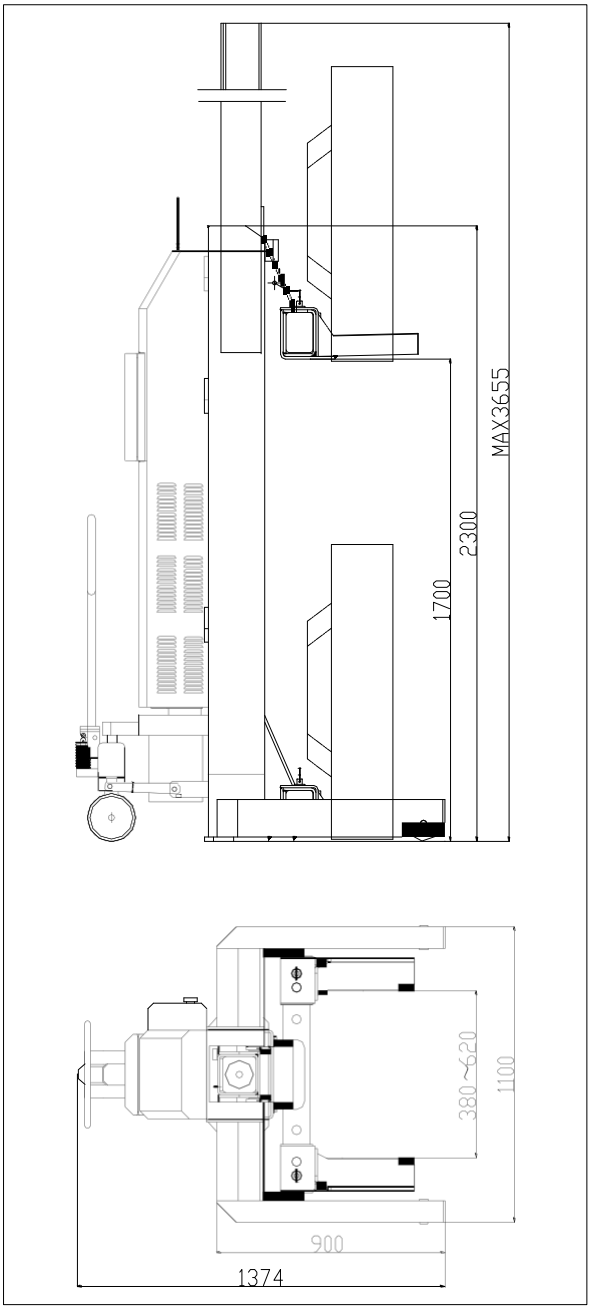
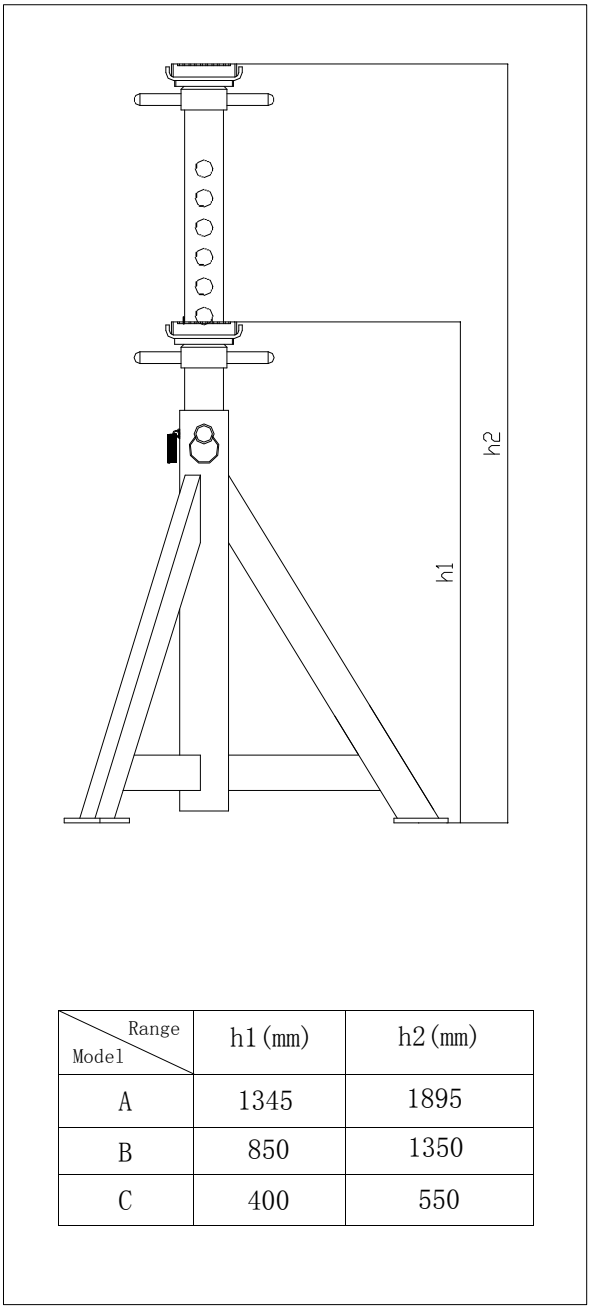



Fig. 2




| Model \ Range | h1 (mm) | h2 (mm) |
|---|---|---|
| A | 1345 | 1895 |
| B | 850 | 1350 |
| C | 400 | 550 |

ML4030B Heavy Duty Column Lift  Axle Stand (Optional)

Fig. 3 Equipment sketch

## 5. The Electronics

The electric control system of ML4030B/ML6045B includes: one master and three slave control boxes (ML4030B), or five slave control boxes (ML6045B). Each column has one displacement sensor, one electric hydraulic pump, one microswitch, and one electromagnet.

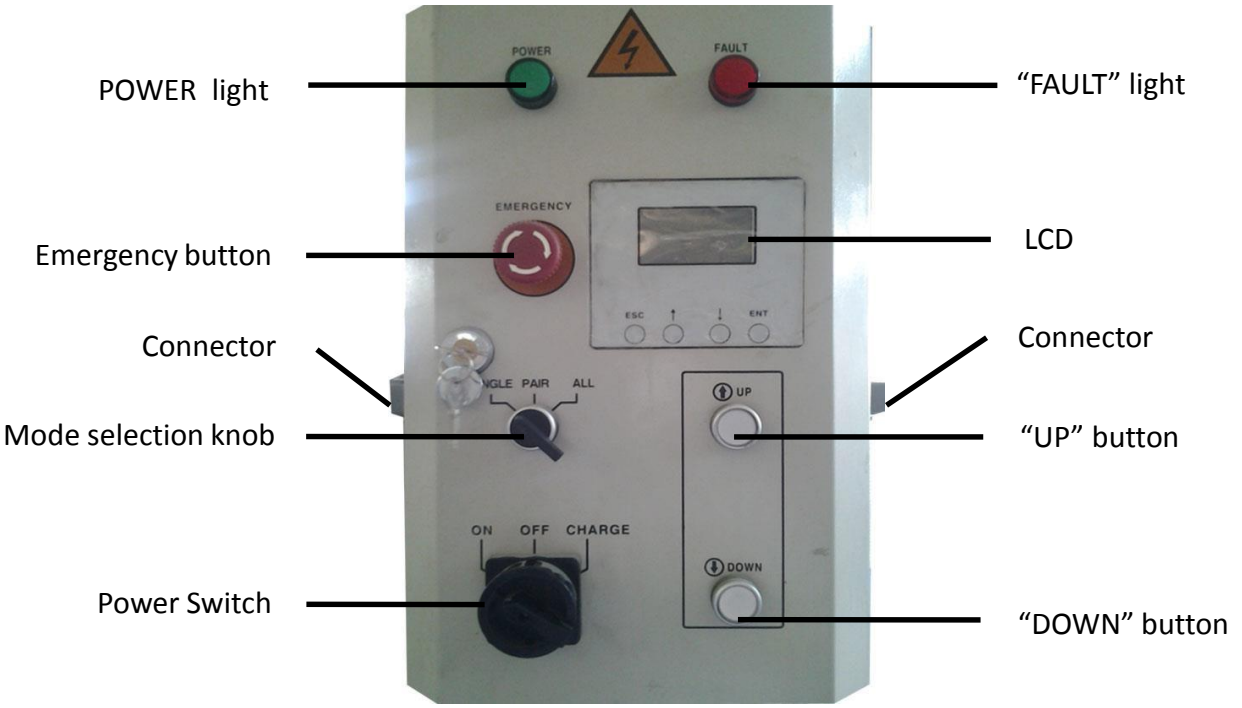



Fig. 4 Master Control Box

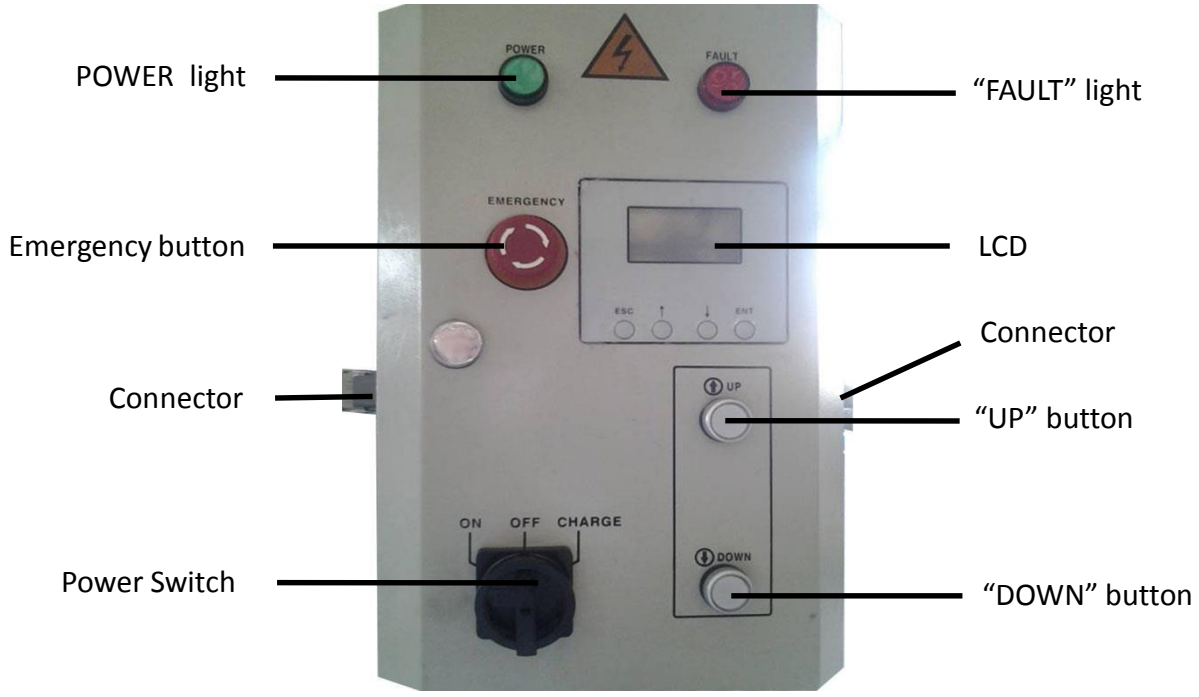



Fig. 5 Slave Control Box

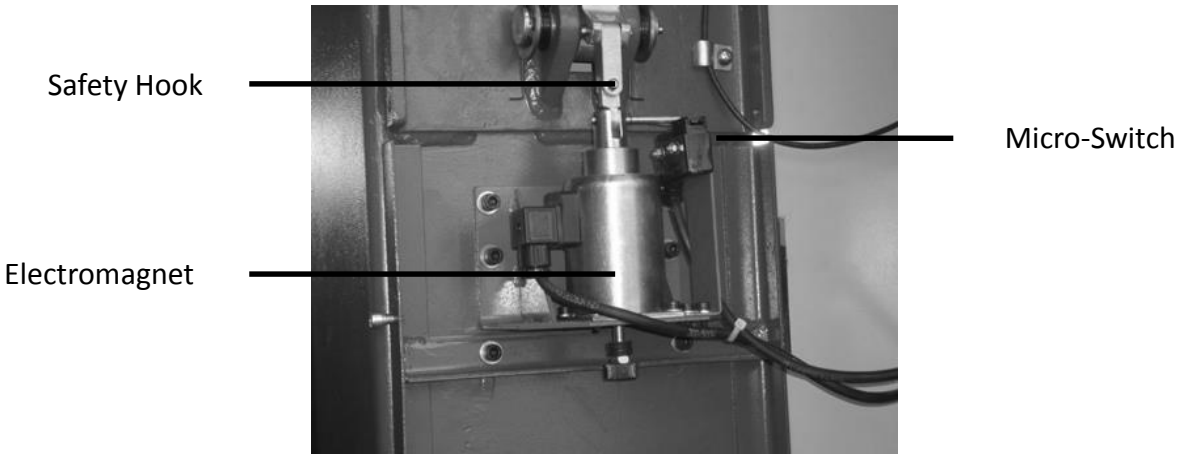



Fig. 6 Slave Control Box

5.1. Control switches

5.1.1. Power switch

When this switch is at “OFF”, the lift is powered off and no operation is available; when this switch is at “ON”, the lift is powered on and prepared for operation. Switch to “CHARGE” to charge the battery.

5.1.2. “POWER” Light

When the power switch is at “ON”, it is shining.

5.1.3. “FAULT” light

When the carriages overrun the limit synchronous value of the each column or the heavy duty connector of the cables become loose, it shines. And all the other switches do not work.

5.1.4. Mode selection knob

Turn the knob to “SINGLE”, columns can be operated to go up and down individually;

Turn the knob to “PAIR” or “ALL”, two columns/four columns/six columns can be operated to go up and down together;

## Note:

1. Before turning Mode Selection knob, please power off the lift and wait for 20s first;
2. “PAIR” mode can be used when four/six columns are communicating well. A and B columns become a pair, same with C and D columns. Please be careful to operate this function. “ALL” mode is used when there are four/six columns connecting together; “SINGLE” mode can be used to operate one column individually;
3. In case of an emergency, turn downward the change-over switch (Fig. 7) in control box, so that the equipment can be operated without communication line;

Fig. 7

5.1.5. Emergency button

When you press this switch, no operation is available immediately. There is one emergency button on each control box.

It must be released before lift operation. Then turn on the power switch.

5.1.6. Operation button

“UP” button: Press and hold this button, the carriages will rise.

“DOWN” button: Press and hold this button, the carriages go down to the required height after system unlocking the hooks automatically.

5.2. Instruction

- Working voltage: DC 24V Battery;
- Working temperature: 42 ~ 104 $^{o}$F;
- Working humidity: 50%@104 $^{o}$F -90%@68 $^{o}$F;
- Working altitude: ≤1000m;
- Circuit inside control box is forbidden to disassemble or maintenance without permission;
- Noise: ≤75dB(A);

## 6. Debugging

6.1. Power supply

The power supply is 24V Battery;

6.2. Battery charge

Please charge the column when “Please charge battery” occurs onto the screen. The charging voltage is: AC 220V, 1 phase

6.3. Test process

6.3.1. Single column test

- Power on: Connect all 4/6 columns with communication cable, turn the Mode Selection knob to SINGLE, and power on main column and all slave columns. LCD screen will show work interface after successful connection.
- Rise: Unloaded, press and hold the “UP” button on the master control box, check if the carriage rises normally. Repeat to try the other columns in same way.
- Air release: When the carriage is crawl and wobble in lifting process, please vent the air out of the cylinder.

  Raise the carriages up to about 600mm; loosen the Drain-tap on the top of the cylinder two turns (see Fig. 8). When there is oil coming out, tighten the Drain-tap.

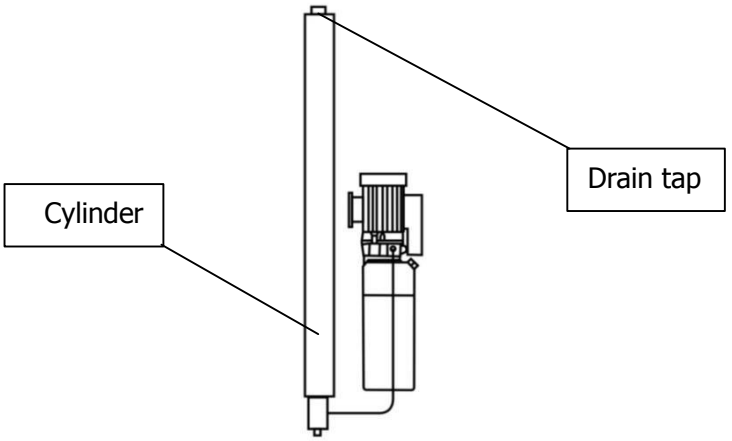



Fig. 8

- Press endure: Press and hold the “UP” button, the carriage rises to its highest position. After holding 5 seconds, check and make sure there’s no hydraulic oil leaking out.
- Lower: Press and hold the “DOWN” button, the carriages go down to the required height after the safety hooks unlocked automatically.
- Urgency pause: When emergency occurs, just press the red emergency button to stop the lift & release it after everything is in good condition.

6.3.2. “PAIR” or “ALL” columns test

- Power on: Connect all 4/6 columns with communication cable according to Fig. 9, 10, turn the Mode Selection knob to PAIR or ALL mode, and power on main column and all slave columns. LCD screen will show work interface after successful connection.
- Rise: Unloaded, press and hold the “UP” button at the master control box, check if all the corresponding carriages can rise normally;
- Lower: Press and hold the “DOWN” button, the carriages go down to the required height after the safety hooks unlocked automatically;
- Urgency Pause: When emergency occurs, just press the red emergency button on any column to stop the system (if equipment continues going, please check electronic control system). Check and repair the system according to the USER’S TROUBLESHOOTING MANUAL. Then release it after everything is in good condition.

**NOTE:**

Please make sure that you have connected all communication cables according to Fig. 9 and 10 before operation.

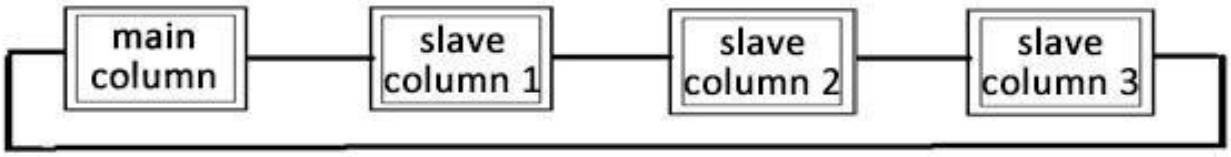



Fig. 9

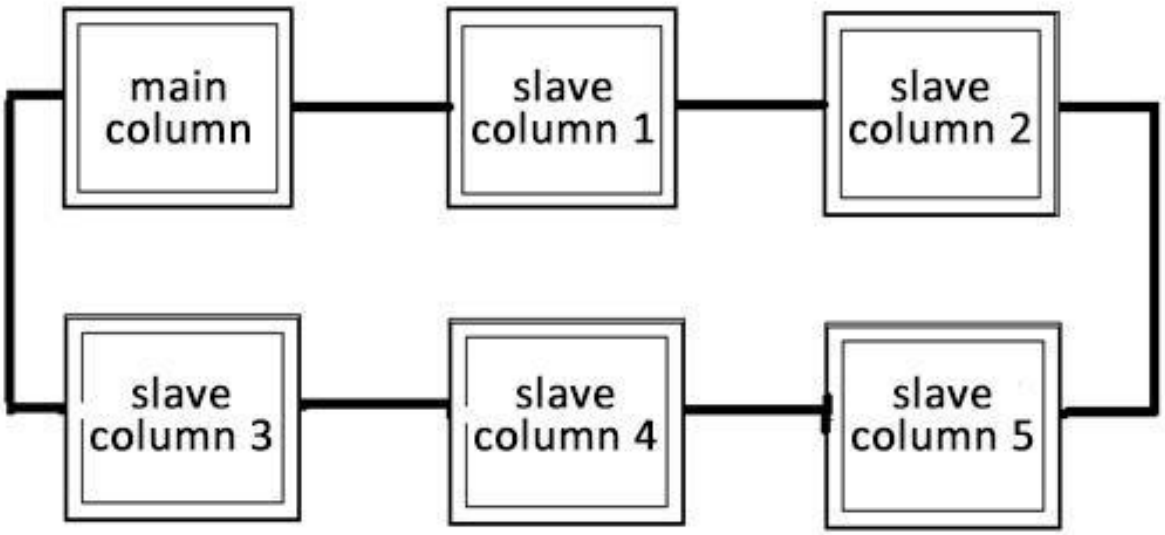



Fig. 10

# 7. Operation

We introduce four columns operate process here; operation of two columns is the same way.

7.1. Raise

7.1.1. After testing successfully, move the four holding fork arms to their very positions. The contacting range must equal with the width of the tires. The right position of each column is shown as Fig.11.

Fig. 11

7.1.2. Connect all columns with communication cable according to Fig. 12, turn the Mode Selection knob to PAIR or ALL mode, and power on main column and all slave columns. LCD screen will show work interface after successful connection.

Fig. 12

7.1.3. Press and hold the “UP” button, when the height reaches 10cm, the column stops, and the beep rings for 2 seconds; please loose the button, and ensure all carriages are lies tightly against the tires. Then continue lifting up the columns.

7.2. Lower

7.2.1. Press and hold the “DOWN” button to lower the vehicle. When the carriage reaches 30cm, the column stops automatically, and the beep rings, please do not put your feet under the carriage to avoid any hurts.

7.2.2. After lowering the vehicle to the ground, move the lift away from it and then drive the vehicle away.

## NOTE:

1. When there is vehicle on the system, make sure 4 wheels of vehicle are on same level, and choose ALL mode;
2. Don't lift any vehicle before hydraulic trolley unloads the press!

## 8. Hydraulic Trolley

8.1. Lifting

Put down the handlebar, press it up & down several times, in order to lift the column at 30 ~ 40mm height from the ground. Refer to Fig. 13, 14.

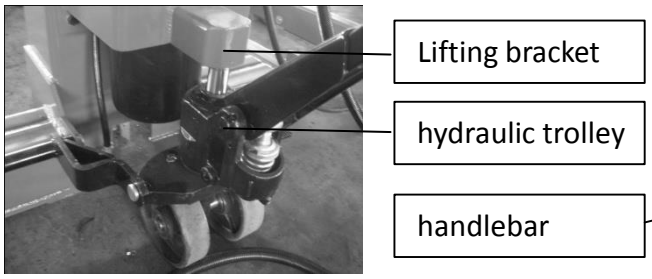



Fig. 13

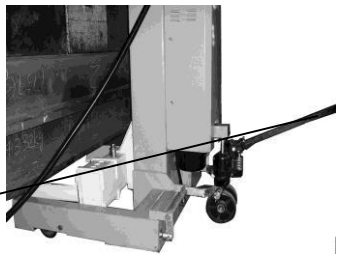


Fig. 14

8.2. Movement

Put up the release bar flatly, move the holding fork arm under the vehicle tire by pushing the handlebar.

8.3. Falling

Put up the release bar upwards (Fig.15), lower the column to the ground slowly.

### Note:

To avoid crushing hands, make sure the doors of the electric control boxes being closed before putting up the release bar!

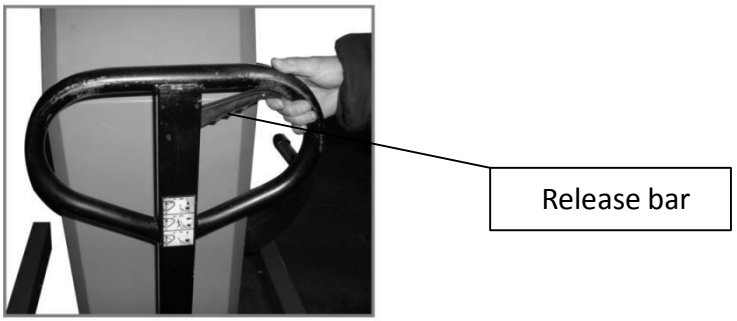
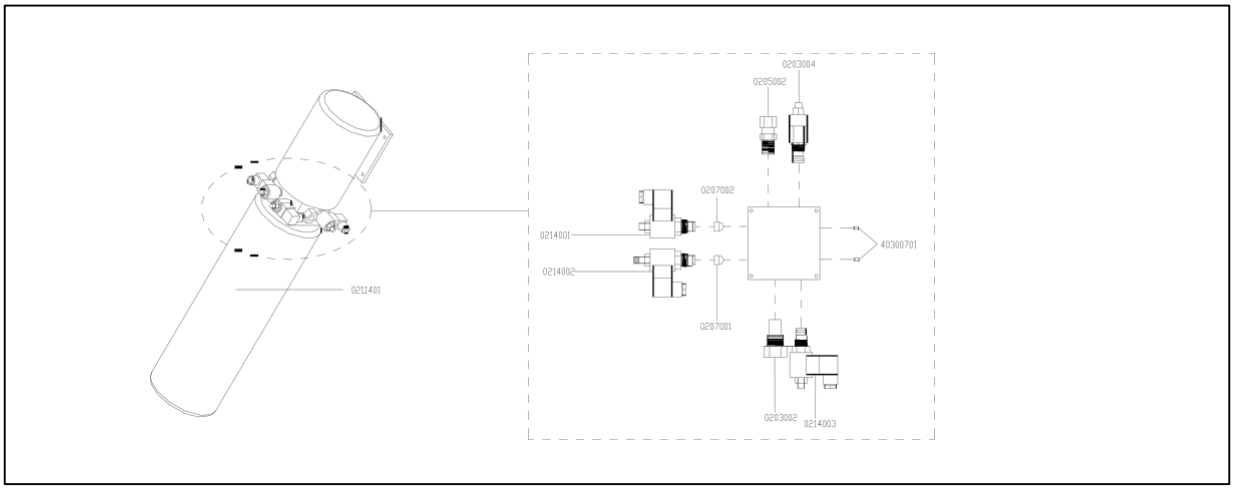



Fig. 15

# Addendum 1: Hydraulic valve



## Addendum 2: Transportation Indications

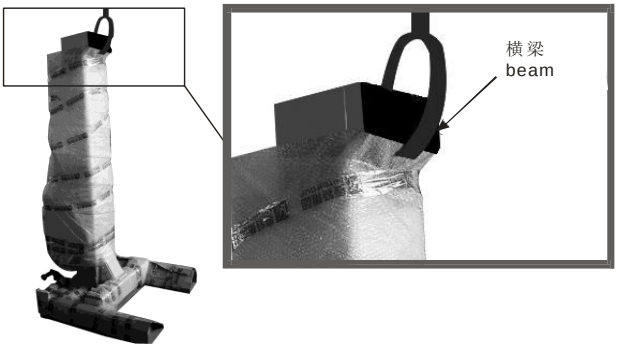
Serial number : _____

Placed and Scoop up direction: _____

UP

Forbidden falling down!

Transit :Except the beam and the bottom of the column,
Forbidden packing and suspending anyother part!




Transit style 1: beam can only bear the deadweight of the column,
so permit suspend it during the transport process.

The bottom of the column Forklift arm

Transit style 2:Allow scooping the bottom of the column else!